



# **2021 Astrophysics Medium Explorer (MIDEX) and Mission of Opportunity (MO) Preproposal Conference**

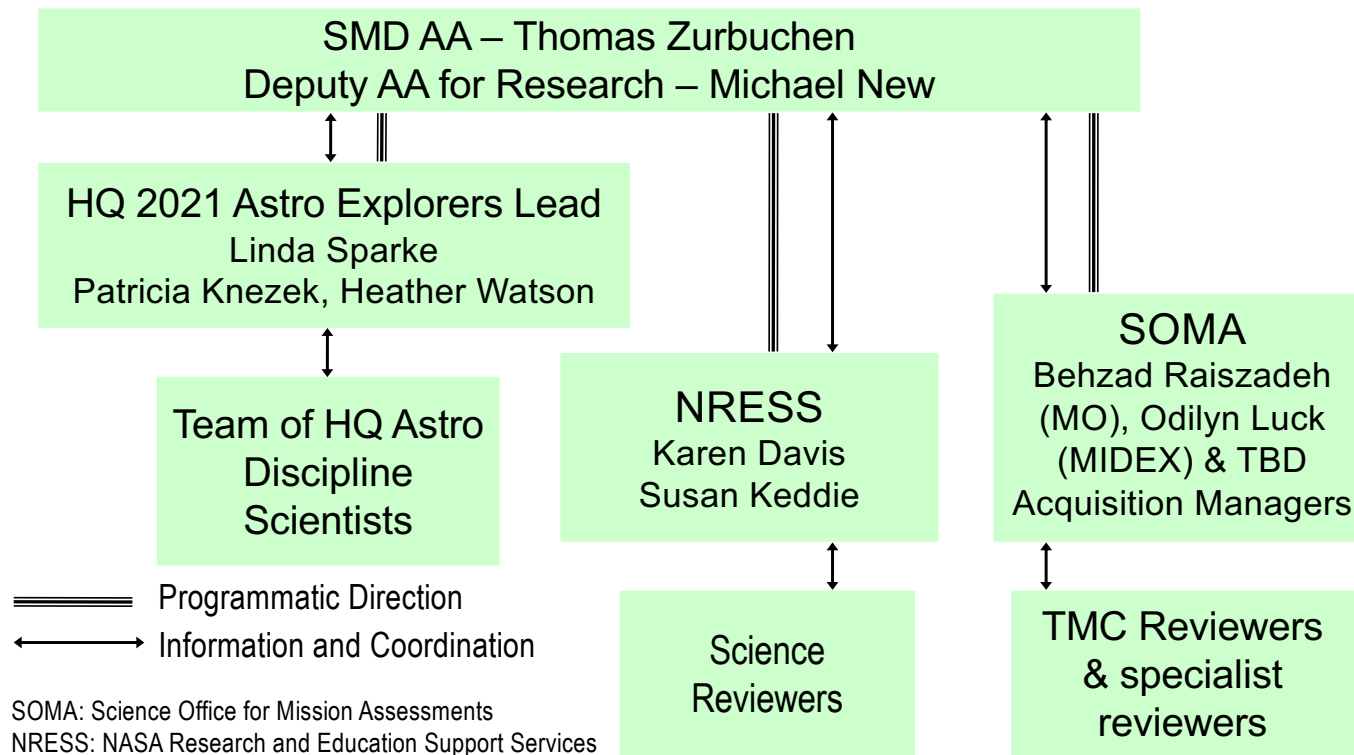
## **Overview of the Evaluation, Categorization, and Selection Process**

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## 2021 Astrophysics Explorers Team

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## Science Office for Mission Assessments (SOMA)

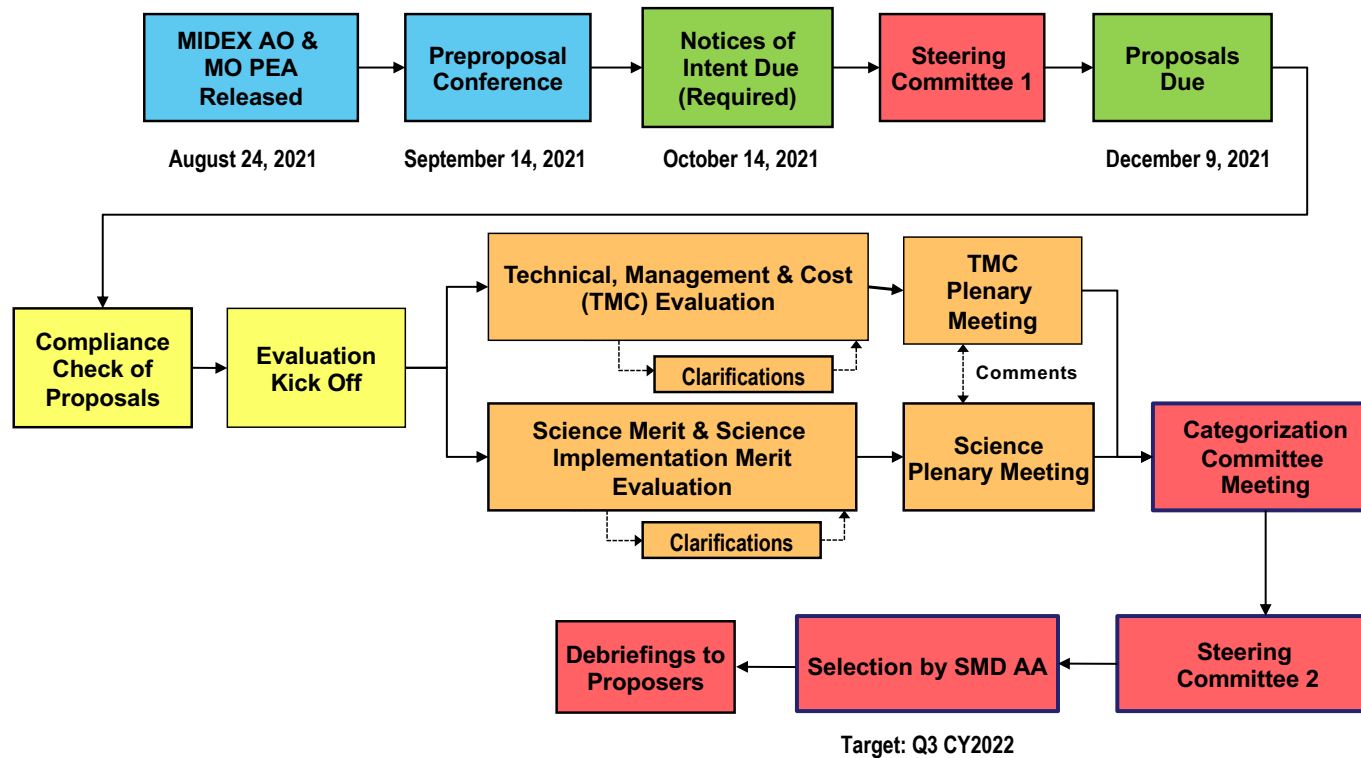
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- The NASA Science Mission Directorate (SMD) **Science Office for Mission Assessments (SOMA)** was established in 1996 to support the Discovery and Explorer Programs. The office now supports also the New Frontiers, Mars Scout, Earth System Science Pathfinder, and others.
- The Technical, Management and Cost process is a standard process used by SOMA to support all SMD evaluations. Lessons learned from each evaluation are incorporated into the process for continuous improvement.



# Proposal Evaluation Flow

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## Two-Step Competitive Process

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### **2021 MIDEX and MO investigations will be evaluated and selected through a two-step competitive process.**

- Step 1 is the solicitation, submission, evaluation, and selection of proposals prepared in response to this AO.
- As the outcome of Step 1, NASA intends to fund approximately two or three Step-1 MIDEX proposals and two or three MO proposals to proceed to a 9-month Phase A concept study and submit Concept Study Reports to NASA.
- Step 2 is the preparation of the Concept Study Reports, their submission and evaluation, followed by a continuation decision (downselection).
- As the outcome of Step 2, NASA intends to select approximately one MIDEX investigation and one or more MO investigations to proceed into Phase B and subsequent mission phases.
- However, in Step 1 NASA may choose to select **MO proposals that are sufficiently compelling and with sufficient technical maturity** to proceed into Phase A development without further competition. NASA would only make such a decision if the proposal was especially compelling (PEA Q Section 5.3.1). There is no special process to request that a proposal be considered for selection at Step 1.



## Requirements Deferred to Step 2

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The following proposal requirements have been deferred until Step 2: references are for the MIDEX AO, Section 8.2 summarizes for MO PEA.

- Independent Verification and Validation of Software (Section 4.6.1)
- Costing of Conjunction Assessment Risk Analysis (Section 4.6.4)
- Science Enhancement Option or its cost (Section 5.1.5)
- Detailed plans for orbital debris and disposal (Section 5.2.7)
- Detailed plans for Space Systems Protection (Section 5.2.11)
- Student collaboration (Section 5.5.3)
- Requirements for real year dollar costs (Section 5.6.2)
- Ground systems and facilities will not be evaluated under Factor C-2 (Section 7.4.2)

Details on each deferral are provided in the applicable section(s).

Many of the deferred requirements include budgeting for related activities, so **proposing at the AO Cost Cap is strongly discouraged!**





## Evaluation: Panel Review

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- All proposals will be screened initially to determine their compliance to requirements and constraints of the applicable AO.
- Proposals that do not comply may be declared noncompliant and returned to the proposer without further review. A submission compliance checklist is provided in the 2021 MIDEX AO and the SALMON-3 AO.
- Compliant proposals will be evaluated against the criteria specified in Section 7.2 of the MIDEX and SALMON-3 AO, and Section 7.1 of the MO PEA, by panels of individuals who are peers of the proposers.
- MIDEX and MO Proposals will be evaluated by a science panel and a technical-management-cost (TMC) panel; the panels evaluate proposals against different criteria.
- Panel members will be instructed to evaluate every proposal independently without comparison to other proposals.
- These panels may be augmented through the solicitation of non-panel ('mail-in') reviews, which the panels have the right to accept in whole or in part, or to reject.



## A proposal must be understandable as a self-contained document

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**Requirement B-1:** A proposal shall ... contain all data and other information that will be necessary for scientific and technical evaluations; provision by reference to external sources, such as Internet websites, of additional material that is required for evaluation of the proposal is prohibited.





## Clarification Process

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- Before finalizing the evaluation, NASA will provide an opportunity for clarification on all potential major weaknesses in the Science Merit, Science Implementation Merit, and TMC Feasibility of Mission Implementation that were identified in the proposal.
- Proposers will receive communication in advance of the clarification round(s) with notification of the schedule, requirements, and limitations. Clarifications from the science panel may be sent separately from those from TMC.
- On the day of the clarification round, proposers will receive a second communication with the potential major weaknesses and instructions for responding. Proposers will have at least 48 hours to respond.
- **New process for responses:** proposers may use 8 pages (total for science) and 6 pages (for TMC) to address all potential major weaknesses from that panel. Details on the required format, and what may be included, are in today's SOMA presentation, and will be posted in the Evaluation Plan. Proposers must decide how best to use those pages: e.g. by concentrating on responses that are most likely to persuade the reviewers that no major weakness exists.
- Responses that go beyond the permitted response format will be deleted and will not be provided to the evaluation panels.



## What happens after the evaluation?

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### Accommodation Study for Rideshare and CLPS Payloads

- After the evaluation, but prior to the selection decision, NASA will perform an accommodation study of selectable rideshare investigation and investigations using PEA-provided CLPS access to cislunar space, to assess the extent to which the proposed investigation is compatible with the expected flight opportunities. A proposed investigation with a high probability of being compatible with several platforms is more likely to be selected than one with less flexible accommodation and orbit requirements.

### Categorization

- Upon completion of the evaluations, the results will be presented to the Categorization Committee, an *ad hoc* subcommittee of the SMD AO Steering Committee composed solely of Civil Servants and IPAs (serving on an Interagency Personnel Agreement) appointed by the SMD Associate Administrator.
- This committee will consider the peer review results and, based on the evaluations, will categorize each proposal according to procedures required by NFS 1872.403-1(e).



## Categorization

The categories are defined as:

- Category I. Well-conceived, meritorious, and feasible investigations pertinent to the goals of the program and the AO's objectives and offered by a competent investigator from an institution capable of supplying the necessary support to ensure that any essential flight hardware or other support can be delivered on time and that data can be properly reduced, analyzed, interpreted, and published in a reasonable time. Investigations in Category I are recommended for acceptance and normally will be displaced only by other Category I investigations.
- Category II. Well-conceived, meritorious, and feasible investigations that are recommended for acceptance, but at a lower priority than Category I, whatever the reason.
- Category III. Meritorious investigations that require further development. Category III investigations may be funded for further development and may be reconsidered at a later time for the same or other opportunities.
- Category IV. Proposed investigations which are recommended for rejection for the particular opportunity under consideration, whatever the reason.



## After Categorization: Steering and Selection

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### Steering Committee

- The AO Steering Committee will conduct an independent assessment of the Evaluation and Categorization processes regarding their compliance to established policies and practices, as well as the completeness, self-consistency, and adequacy of all supporting materials.

### Selection by SMD Associate Administrator

- The evaluation results will be presented to the Associate Administrator for the Science Mission Directorate, who will make the final selections. As the Selection Official, s/he may consult with senior members of SMD and the Agency concerning the selections.
- The Selection Official may take into account a wide range of programmatic factors in deciding whether or not to select any proposals and in selecting among selectable proposals, including, but not limited to, planning and policy considerations, available funding, programmatic merit and risk of any proposed partnerships, and maintaining a programmatic balance across the mission directorate(s).
- As part of the selection decision, a decision will be made as to whether any Category III proposals will receive funding for technology development.



## Post-Selection Debriefings

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- Proposers of investigations will be notified in writing and offered oral debriefings for themselves and representatives from each of their main partners.
- Written debriefing materials will be provided ahead of the time of the oral debriefing. Such debriefings may be in person at NASA Headquarters or by telephone/videoconference.



## Where to Find Information

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### **Explorer Acquisition Home Page**

The 2021 Astrophysics Explorers Acquisition Homepage, available at <http://explorers.larc.nasa.gov/2021APMIDEX/>, will provide updates and any AO addenda during the Explorer AO solicitation process. It provides links to the Program Library, a list of potential teaming partners, and questions and answers regarding the AO.

### **Program Library**

The Explorer Program Library provides additional regulations, policies, and background information on the Explorer Program. The MIDEX and MO Program Libraries are accessible at:

<http://explorers.larc.nasa.gov/2021APMIDEX/MIDEX/programlibrary.html>,

and

<http://explorers.larc.nasa.gov/2021APMIDEX/MO/programlibrary.html>